

**CLAIMS:**

1. A solar receiver for receiving solar radiation and converting its energy into another form of energy, the receiver comprising:
  - (a) a housing defining a receiver chamber having a longitudinal  
5 central axis and an aperture;
  - (b) a window mounted in said aperture and adapted for the admission of concentrated solar radiation and passing it into said receiver chamber;
  - (c) at least two inlet means axially spaced from said window and  
10 positioned at different distances therefrom for the injection into the receiver chamber of different flows of working fluid;
  - (d) an outlet means for the ejection of the working fluid out of the receiver chamber; and
  - (e) absorption control means for the provision of said different  
15 flows of the working fluid with different capability to absorb solar radiation such that said capability is higher in the flow of the working fluid adapted for the introduction in said chamber via that one of said at least two inlets which is spaced from said window to a greater distance.
- 20 2. A solar receiver according to Claim 1, having at least three said inlet means, wherein said absorption control means ensure that said capability to absorb solar radiation in the corresponding different flows of the working fluid are independent of one another.
3. A solar receiver according to Claims 2, wherein said capability of the  
25 working fluid, in said different flows, to absorb solar radiation, gradually increases from a minimal capability in the flow of the working fluid adapted for the injection into said chamber via the inlet means closest to the window to a maximal capability in the flow of the working fluid adapted for the injection via the inlet means farthest from said window.

4. A solar receiver according to any one of the preceding claims, wherein said receiver chamber has a front wall, a rear wall and a side wall extending therebetween, the front wall having said aperture, the rear wall having said outlet means and the side wall being formed with said at least two inlet means.
- 5 5. A solar receiver according to any one of the preceding claims, wherein said capability of the working fluid to absorb solar radiation is defined by the concentration of solar absorbing particles in the working fluid.
6. A solar receiver according to Claim 6, wherein said differing flows of the working fluid injected into the receiver chamber have different concentrations of  
10 said solar absorbing particles.
7. A solar receiver according to any one of the preceding claims, wherein said chamber has a cross-sectional area at a region adjacent said outlet means smaller than that adjacent said aperture.
8. A solar receiver according to any one of the preceding claims wherein said  
15 chamber has an elongated shape, a front region defined by the front wall and a front half of the side wall and a rear region defined by said rear wall and a rear half of the side wall, wherein said two inlet means are located in the different regions of the chamber.
9. A solar receiver according to any one of the preceding claims further  
20 comprising means for said parameters of the controlling flow rate and/or injection angles of said different flows of the working fluid.
10. A solar receiver according to any one of the preceding claims, comprising an additional inlet for the injection therethrough of a coolant or a protecting fluid flow along said window.
- 25 11. A solar receiver according to any one of the preceding claims, wherein each of said at least two inlet means includes a plurality of inlet ports.
12. A method for introducing a working fluid in a solar receiver according to any one of Claims 1 to 10, comprising injecting the working fluid in different fluid flows such that, in regions farther spaced from the window, capability of the

- 11 -

working fluid to absorb solar radiation is higher than in regions located closer to the window.

13. A method according to Claim 11, wherein the capability of the working fluid to absorb solar radiation is defined by concentration of solar absorbing  
5 particles contained therein.

14. A method according to any one of the preceding method claims, wherein said working fluid is characterized by at least one parameter selected from a flow rate of the working fluid, and an angle at which the working fluid is injected into the chamber, and these parameters are controlled to increase the temperature of the  
10 working fluid in the flow thereof injected farther from the window.